REMARKS

This submission is a supplement to the response filed January 24, 2005, to the Final Rejection dated October 20, 2004 (hereinafter the "Final Rejection"). As such, issues contained in the Final Rejection not addressed herein are fully responded to in the January 24, 2005 submission. By virtue of entry of the amendment filed on January 24, 2005, as requested in the Request for Continued Examination dispatched via First Class Mail to the U.S. Patent and Trademark Office on March 21, 2005, claims 1-7, 9-20 and 38-41 are currently pending in the present application.

Rejections under 35 U.S.C. § 103(a)

Claims 1-4, 7, 9-20, 38 and 42 stand rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 6,162,801, issued to Kita (hereinafter "Kita"), Bissett, D.L. *et al.*, *J. Soc. Cosmet. Chem.* **1992**, *43*, 85-92 (hereinafter "Bissett"), and Darr, D. *et al.*, *British Journal of Dermatology* **1992**, *127*, 247-253 (hereinafter "Darr"), in view of Shimoi, K., *et al.*, *Mutation Research* **1996**, *350*, 153-161 (hereinafter "Shimoi") and U.S. Patent No. 5,776,460, issued to Kim et al. (hereinafter "Kim"). Applicant respectfully traverses this rejection for the reasons set forth below.

Applicant respectfully submits that the Official Action does not set forth a *prima facie* case of obviousness in support of the rejection under 35 U.S.C. § 103(a). According to M.P.E.P. § 2143,

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.
>
> The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. [*Citation omitted.*]

As discussed in detail in the Amendment After Final Rejection filed on January 24, 2005, none of the references relied upon by the Examiner in support of the rejections under 35 U.S.C. §103(a) discloses:

(1) administration of D vitamins for the purpose of treating radiation injury resulting from proton radiation, fluoroscopic radiation, alpha radiation, beta radiation and gamma radiation, or

(2) use of either D vitamins or the antioxidants of claim 1 to treat radiation injury resulting from proton radiation, fluoroscopic radiation, alpha radiation, beta radiation and gamma radiation.

Applicant submits that the cited references do not contain every element of a *prima facie* case of obviousness, since at least these two elements of claim 1 are missing from the cited references and all of the dependent claims currently pending in the present application ultimately depend from independent claim 1. Accordingly, Applicant submits that the Official Action does not set forth a *prima facie* case for the obviousness of any pending claim of the present application over the cited references.

In addition, the cited references also do not set forth a case of *prima facie* obviousness because the cited references provide no teaching or suggestion that would provide a skilled person with an expectation of successfully treating radiation injury from one of the types of radiation claimed in claim 1, by oral administration of a composition including vitamin D_3. Therefore, for this additional reason, the cited references do not set forth a case of *prima facie* obviousness.

Further, in support of the obviousness rejection, the Examiner relies on the following motivation to combine the teachings of the numerous references relied upon:

> "Furthermore, as indicated in the previous Office Action, since all active composition components herein are known to [be] useful to treat radiation injury, it is considered prima facie obvious to combine them into a single composition to form a third composition useful for the very same purpose. At least additive therapeutic effects would have been reasonably expected. See *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980)." Final Rejection at page 12.

However, this motivation cannot be sustained since it is inconsistent with a previous position taken by the Examiner wherein the Examiner stated that,

> "It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity." Office Action dated April 30, 2004, page 5. (emphasis original)

Thus, on April 30, 2004, the Examiner took the position that due to the unpredictability of the pharmaceutical art, each embodiment or combination of ingredients must be individually assessed for physiological activity. However, in the Final Rejection, the Examiner says that a skilled person would expect at least additive therapeutic effects for each embodiment. This is clearly inconsistent with the Examiner's earlier position, since the Examiner took the earlier position that is not possible for the skilled person to expect any specific therapeutic effect of a particular embodiment, since the pharmaceutical art is highly unpredictable and each combination of ingredients must be individually assessed for physiological activity. Accordingly, by the Examiner's own earlier admission, there is no motivation for a skilled person to combine the ingredients of the various cited references since, as the Examiner stated in the April 30, 2004, Office Action, the skilled person cannot predict the physiological activity of such combinations without individually assessing the physiological activity of each combination. Therefore, the skilled person would not have an expectation of success for combinations of the ingredients and thus no motivation to combine them.

Finally, the Examiner stated that, "... the record contains no clear and convincing evidence of nonobviousness or **unexpected results** for the oral compositions herein employed in the claimed method herein over the prior art." (emphasis original) See page 12 of the Final Rejection.

In response to this comment, the applicant submits herewith the Declaration of Gerald H. Sokol, M.D., which provides evidence of nonobviousness and/or unexpected results for the compositions as specified in the pending claims. More specifically, the Declaration shows that compositions in accordance with the present invention, when administered to mice prior to, on the day of, and/or after exposure to ionizing radiation, provided clinically and statistically significant improvements in the percentage survival of these mice, relative to control mice that received the vehicle only, without the active ingredients.

These results are clearly unexpected since none of the prior art references cited by the Examiner contains any teaching or suggestion that administration of a composition in accordance with the method of the present invention would increase survival rates of any living creature exposed to ionizing radiation. Thus, there is no evidence of record that a skilled person would expect that administration of such compositions would provide this result. Therefore, the result is unexpected.

Thus, the Applicant respectfully requests that the rejections under 35 U.S.C. § 103(a) be withdrawn upon reconsideration.

In view of the foregoing remarks, Applicant respectfully submits that all of the pending claims are in condition for allowance and respectfully requests a favorable Office Action so indicating.

Respectfully submitted,

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Kevin J. Dunleavy
Reg. No. 32,024

KNOBLE YOSHIDA & DUNLEAVY, LLC
Customer No. 21,302
Eight Penn Center, Suite 1350
1628 John F. Kennedy, Jr. Blvd.
Philadelphia, PA 19103
Phone: (215) 599-0600
Fax: (215) 599-0601

Enclosure: Declaration of Dr. Gerald Sokol